



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,017	01/15/2002	Yoshitaka Terao	P56664	7888

7590 10/21/2004

Robert E. Bushnell
Suite 300
1522 K Street, N.W.
Washington, DC 20005

EXAMINER

MACCHIAROLO, PETER J

ART UNIT	PAPER NUMBER
----------	--------------

2879

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,017

Applicant(s)

TERAO ET AL.

Examiner

Peter J Macchiarolo

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-11 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0604.

- mm3* 3) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Supplemental Non-Final Office Action

1. In a phone conversation held with Applicant's representative, Sam Sahota, on 10/14/04, Applicant's representative stated that the Final Rejection (08/09/2004) was premature because the Non-Final Rejection (01/14/2004) to which the Final Rejection depended on was improper, since the Non-Final Rejection was in reply to the Petition (12/03/2003), and not to the After Final Amendment (12/31/2003). The Examiner agrees and the finality of the previous office action is hereby withdrawn. The Final Rejection (08/09/2004) is replaced with the below Non-Final Rejection.

Response to Amendment

2. The reply filed on 03/12/2004 consists of changes to the specification, drawings, and to the claims, and further, the reply consists of remarks related to the prior rejection of claims in the previous Office Action. The above have been entered and considered. However, claims 1-5, 7-11, and 19-21 are not allowable as explained below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7-10, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over previously cited Komaki et al (USPN 6236160; "Komaki") in view of previously cited Kaake et al (USPN 6307318; "Kaake").

4. In regards to claims 1, Komaki discloses in figures 3 and 7, a first (1) and second (2) substrate opposing one another; a plurality of first electrodes (3b) formed on a surface of the first substrate facing the second substrate, and a first dielectric layer (5) covering the first electrodes, a plurality of main barrier ribs (12) integrally formed on a surface of the second substrate facing the first substrate which define a plurality of discharge cells (11). Komaki further discloses a plurality of electrode barrier ribs (9) formed on the second substrate between the main barrier ribs into a plurality of partitioned discharge cells, the partitioned discharge cells for each of the discharged cells accommodating a phosphor layer (10) of the same color, and a discharge gas provided in the discharge cells.¹

5. Komaki is silent to a second electrode and a second dielectric layer being formed on a distal end of each of the electrode barrier ribs.

6. However, Kaake teaches in figure 14 that a second electrode (92) and a second dielectric layer (94) may be formed on a distal end of the barrier ribs, and this configuration provides an

improved back glass substrate for a plasma display panel.² One would be motivated to make such a modification to Komaki's panel for a variety of reasons, including material availability, improved electrode insulation and image quality, and specific market targeting.

7. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki including the electrode and dielectric layer structure of Kaake.

8. Regarding claims 2-3, Komaki is silent to the exact height of the dielectric layers.

9. However, Kaake teaches in figure 14 that the second dielectric layer is formed on the second electrode, which is, formed the distal end of each of the barrier ribs. Kaake further teaches in figures 13-14, that a dielectric layer may be formed on every barrier rib using a method that will establish a height of an upper surface of the second dielectric layer and a third dielectric layer to be substantially the same, and this configuration improves large screen plasma displays by allowing for an easier manufacturing method.³ One would be motivated to make such a modification to Komaki's panel to allow for easier manufacturing.

10. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki including the dielectric layer structure of Kaake to allow for easier manufacturing.

11. Regarding claim 5, Komaki is silent to the second electrode being formed on a distal end of each of the main barrier ribs and electrode barrier ribs.

¹ Komaki, col. 6, line 46.

12. However, Kaake teaches in figure 14, that one of the second electrodes (92) is formed on a distal end of each of the main barrier ribs (40) and the electrode barrier ribs (40). Kaake further teaches in figure 1-5 and column 1 lines 65-67, that the barrier ribs are formed integrally with the second substrate, and this configuration allows for an improved method for making a back glass substrate for a plasma display panel. One would be motivated to make such a modification to Komaki's panel to establish reduced manufacturing costs, or time needed to manufacture the device.

13. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki including the electrode configuration of Kaake to allow for reduced manufacturing costs or time.

14. Regarding claim 7, Komaki shows in figure 3, the electrode barrier ribs are formed integrally with the second substrate.

15. Regarding claims 8-10, Komaki teaches in figures 2 and 7 that each discharge cell is divided into two partitioned discharge cells in which the same phosphor layer is formed, and the partitioned discharge cells include concave surfaces (the phosphor surfaces shown in figure 2), and a width of each of the partitioned discharge cells are formed to correspond to a color displayed by the particular portioned discharge cell.

² Kaake, col. 2, ll. 47-50 and col. 3 ll. 60-61,

Art Unit: 2879

16. Regarding claim 19, Komaki discloses in figures 3 and 7, a first (1) substrate, a second substrate (2) opposing the first substrate; a plurality of first electrodes (3b) formed on a surface of the first substrate facing the second substrate; a first dielectric layer (5) covering the first electrodes, a plurality of main lattice walls (12) integrally formed on a surface of the second substrate facing the first substrate which define a plurality of discharge cells (11); a plurality of electrode lattice walls (9) each electrode lattice walls dividing each discharge cell formed between the main lattice walls into a plurality of partitioned discharge cells, the partitioned discharge cells for each of the discharged cells accommodating a phosphor layer (10) of the same color.

17. Komaki is silent to a second electrode and a second dielectric layer being formed on a distal end of each of the electrode lattice walls.

18. However, Kaake teaches in figure 14 that a second electrode (92) and a second dielectric layer (94) may be formed on a distal end of the barrier ribs, and this configuration provides an improved back glass substrate for a plasma display panel.⁴ One would be motivated to make such a modification to Komaki's panel for a variety of reasons, including material availability, improved electrode insulation and image quality, and specific market targeting.

19. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki including the electrode and dielectric layer structure of Kaake.

20. Regarding claim 20, Komaki is silent to the exact height of the dielectric layers.

³ Kaake, col. 1, ll. 48-51.

21. However, Kaake teaches in figure 14 that the second dielectric layer is formed on the second electrode, which is, formed the distal end of each of the barrier ribs. Kaake further teaches in figures 13-14 and column 1, lines 48-51 that a dielectric layer may be formed on every barrier rib using a method that will establish a height of an upper surface of the second dielectric layer and a third dielectric layer to be substantially the same and this configuration improves large screen plasma displays by allowing for an easier manufacturing method. One would be motivated to make such a modification to Komaki's panel to reduce manufacturing costs and time.

22. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki including the dielectric layer structure of Kaake.

23. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komaki in view of Kaake, in further view of previously cited Hirao et al (USPN 6424095; "Hirao").

24. In regards to claim 11, Komaki and Kaake teach all of the recited limitations of claim 10 (above).

25. Both Komaki and Kaake are silent to the partitioned discharge cells displaying blue include a larger width than the portioned discharge cells displaying green, and the portioned discharge cells displaying green have a larger width than the portioned discharge cells displaying red.

⁴ Kaake, col. 2, ll. 47-50 and col. 3 ll. 60-61,

Art Unit: 2879

26. However, Hirao teaches that this configuration is known to produce proper brightness ratios.⁵ One would be motivated to make such a modification to improve the overall image quality.

27. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the plasma display panel of Komaki with the electrode configuration of Kaake, including the blue discharge cells being wider than the green discharge cells, and the green discharge cells being wider than the red discharge cells.

Response to Arguments

28. Applicant's arguments filed 03/12/2004 have been fully considered but they are not persuasive.

29. First, Applicant alleges that Komaki teaches only a single type of barrier rib, and that Komaki uses the same reference number 9 to denote ribs which are exactly the same, and does not disclose two distinct elements (electrode barrier and main barrier).⁶ The Examiner respectively disagrees and directs Applicant to figure 7 of Komaki and numbered paragraph 15 of the previous Office Action. Komaki shows the main barrier ribs at element 12, and the electrode barrier ribs at element 9. The examiner asserts these elements (9 and 12) are distinctly different as shown in figure 7.

⁵ Hirao, col. 2, ll. 9-31.

⁶ Arguments, p. 18, para. 2 to p. 19, para. 1.

Art Unit: 2879

30. Second, Applicant alleges that the motivation used during the rejection of claims 1, 6, and 19 was very general and therefore improper.⁷ However, after further consideration, the Examiner respectfully disagrees that the motivation is improper and maintains the rejection. The Examiner combined Kaake with Komaki because Kaake teaches that the configuration provides an improved back glass substrate for a plasma display.

31. The Examiner respectfully directs Applicant to Kaake, col. 3, ll.60-61:

a. "Another object of the present invention is to provide an improved back glass substrate for a plasma display panel."

32. This motivation was used by the Examiner as one example of Kaake's teachings that would motivate one skilled in the art to construct Kaake's rib configuration. The Examiner asserts the showing is "clear and particular." Kaake is clear that it is the back glass substrate which is particularly improved. Furthermore, at col. 1, ll. 48-51, Kaake teaches the conventional back glass substrate is difficult to use for large screen plasma displays, and Kaake's clearly motivates one of ordinary skill in the art to use the recited improved back substrate and manufacturing method.

33. Third, Applicant alleges there is no teaching in Kaake that the height of the dielectric layers are substantially the same.⁸ However, as mentioned in the previous office action at numbered paragraph 21, Kaake's disclosed method of manufacturing the device will inevitably establish a height of an upper surface of the second dielectric layer (formed on the electrode barrier ribs 9) and a third dielectric layer (formed on the main barrier ribs 12) to be substantially

⁷ Arguments, p. 20, para. 2.

Art Unit: 2879

the same. As taught by Kaake in column 4, lines 4-9, the method involves layering a common dielectric layer on the back glass substrate, then hot forming the gas discharge troughs and barrier ribs, thereby separating the common dielectric layer into different strips, which are subsequently layered on distal ends of the main barrier ribs and electrode barrier ribs. Therefore, a height of the dielectric layers will be substantially the same since the dielectric layer is removed from a common layer at a substantially equal height.

34. Fourth, Applicant alleges that the discharged cell is distinct from the phosphor layer and therefore Komaki and Kaake fail to teach the discharge cells include concave surfaces.⁹ The Examiner respectfully asserts that the limitation, “the partitioned discharge cells include concave surfaces,” is extremely broad, and does not limit the cells to be shaped in a concave structure, but merely requires the discharge cells to include (i.e. to contain as a secondary or subordinate element¹⁰) a concave structure, or in this case, contains a concave phosphor structure, which Kaake clearly shows in figure 2.

35. Fifth, Applicant alleges the main barrier ribs and electrode barrier ribs of Kaake are not different and distinct elements.¹¹ This issue has already been refuted at numbered paragraph 28 (above).

⁸ Arguments, p. 20, para. 5.

⁹ Arguments, p. 21, para.3.

¹⁰Definition The American Heritage® Dictionary of the English Language, Third Edition copyright © 1992 by Houghton Mifflin Company. Electronic version licensed from INSO Corporation; further reproduction and distribution restricted in accordance with the Copyright Law of the United States. All rights reserved.

¹¹ Arguments, p. 22, para. 2.

Art Unit: 2879

36. Sixth, Applicant alleges that using Hirao (USPN 6424095) to reject claim 11 is a new ground for rejection which has not been necessitated by an amendment, and the finality of the office action must be withdrawn.¹² The Examiner respectfully asserts that the previous Office Action carried the status of Non-final, thus rendering this argument moot.

37. Seventh, Applicant alleges that the Examiner has failed to show a motivation to combine or modify Kaake and Komaki in view of Hirao.¹³ The Examiner respectfully directs Applicant to numbered paragraph 35 in the previous Office Action, "However, Hirao teaches that this configuration is known to produce proper brightness ratios. One would be motivated to make such a modification for a variety of reasons, including material availability, improved image quality and specific market targeting." The Examiner believes this to be a proper motivation and reason to combine.

Allowable Subject Matter

38. Claims 4 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

39. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to disclose or motivate the limitations of claim 4, wherein a height of an upper surface of the third dielectric layer being greater than a height of an upper surface of the second dielectric layer.

¹² Arguments, p. 23, para. 2.

Conclusion

40. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6670757 to Kato is evidence that using a plurality of main electrode ribs and electrode barrier ribs are known in the art.

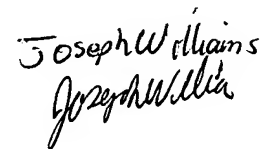
41. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

42. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

43. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



pjm



Joseph Williams
Joseph Williams

¹³ Arguments, p. 23, para. 3.